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# BEEBLET

## CONTENTS

Editorial 2
Menu for Printer Codes 3
ScreenDump in Mode 7 5
*FX Calls VI
    Flushing Buffers 6
Verifying Files 9
Home Thoughts on Ordering Abroad (Pt 2) 10
Freezing Viewsheet (Help Wanted) 13
Epson LQ850 - Printer Review 14
Rapid 36-GON 16
Important Notices
    Christmas Disc 18
    Beeblet Periodicity 19
Careware - Using the GEN Program 20
Machine Code Book Review 22
Membership 23
Local User Group Meetings, Contacts 24
*Beeblet* - Contributions and Deadlines 24

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# *EDITORIAL*

This month's issue has been delayed awaiting a few more contributions. Your attention is drawn to the Notices on pages 18 and 19 of this issue.

On your behalf, I would like to thank the contributors represented in this issue:

| | | |
|---|---|---|
| Les Amon | Dunedin | |
| John Andrew | Wellington | (2) |
| Denis Cribb | Wellington | |
| Anne Flower | Wellington | |
| Don MacDonald | Wellington | |
| Hugh Penhale | Wellington | |
| Mike Shores | Auckland | |

I have kept my Beeb busy for many hours (in some cases, days) over the last couple of months doing Careware pictures. So I've included a brief article to assist those who have not tried drawing pictures yet. It can be a little frustrating getting started.

Copies of the Careware disc can still be made available - but please find out if someone in your area has a copy first. If there are no local copies yet, requests can be sent to the National User Group - just supply a disc and return postage. People who already have copies are encouraged to make copies for others in their area.

Just a reminder, though, that Dr Chris Reynolds, who retains the copyright on the Careware disc, has requested that donations be made to the Mental Health Foundation in lieu of payment for the software. It is a bargain at twice the price!

Next Issue - November (hopefully)

Happy Computing

Graham Ellett

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# *MENU for PRINTER CODES*

by Hugh Penhale, Wellimgton

Normally codes for various options and type styles are sent to the printer from the word processor or spreadsheet by escape sequences embedded in the text or by highlights and a printer driver. Sometimes these do not work because of bugs in the versions of VIEW (A2.1) and ViewSheet I use.

An alternative is to use VDU commands in immediate mode in BASIC. These have the disadvantage that the commands are printed wasting a perfectly good sheet of paper.

A program is an elegant solution. The BEEBUG FILER menu (BEEBLET JUN 87 or on disc from secretary) has been modified. The codes chosen suit a LOGITEC (Epsom look-alike) dot-matrix printer but alternative and/or additional ones could easily be used.

As I often need to print '£' sign I cannot use the <pound-sign> as a hard <space> (Micro User, July 1986, p. 101). I use '\' as a hard space, downloading <space> to position 92 before printing. I might add that the left quote works OK in draft mode but does not match the right quote in NLQ. Any solution from readers?

```
   5 REM  B.SETPRT ..... SET PRINTER CODES
  10 REM Based on BEEBUG FILER version B1.19/W  Main Menu
  30 REM Author Mike Williams  BEEBUG March 1986
 100 IF Z%<>7777 THEN MODE 3:Z%=7777
 105 VDU26:ON ERROR PROCerror:END
 110 X=0:Y=0:w=0:exit%=FALSE:DIM os 40
 120 PROCtitle:PROCwindow1:PROCmenu:PROCwindow2:CLS
 140 REPEAT:PROCcommand:UNTIL exit%
 165 Z%=0:VDU26,12:*FX4,0
 170 END
 180 :
1200 DEF PROCmenu
1210 LOCAL X%:X%=25:CLS
1215 PRINTTAB(X%-10,1)"Ensure PRINTER Power Switch ON
     before selecting CODES"
1220 PRINTTAB(X%,2)"A. Page Length 70"
1230 PRINTTAB(X%,4)"B. 12 characters/inch"
```

.... *B.SETPRT* Contd >>>

```
1240 PRINTTAB(X%,6)"C. 17 characters/inch"
1245 PRINTTAB(X%,8)"D. Download Leftquote to 126, normally
     <TILDA>"
1250 PRINTTAB(X%,10)"E. Download <space> to 92, normally
     '\' <back slash>"
1260 PRINTTAB(X%,12)"F. Skip over Perforations (3 lines)"
1270 PRINTTAB(X%,14)"G. Initialise, US char set, Pica,
     release skip over"
1275 PRINTTAB(X%,16)"H. Exit"
1280 ENDPROC
1290 :
1300 DEF PROCtitle
1310 PRINTTAB(0,1)STRING$(80," ")
1320 PRINTTAB(25,1)"S  E  T   P  R  I  N  T  E  R"
1340 PRINT STRING$(80,"_")
1360 PRINTTAB(0,20)STRING$(80,"_")
1380 ENDPROC
1400 :
1500 DEF PROCcommand
1540 REPEAT
1550   PRINT"-> ";
1560   C=GET:
       IF C=42 THEN INPUT LINE"*" pm$ ELSE C=C AND 223:
       PRINT CHR$(C)
1600   IF (C<65 OR C>73) AND C<>42 THEN PRINT"Unrecognised
       command"
1620   UNTIL (C>64 AND C<74) OR C=42
1630 IF C=65 THEN VDU 2:VDU 1,27, 1,67, 1,70:VDU 3:
     REM  70 lines per page
1640 IF C=66 THEN VDU 2:VDU 1,27, 1,77:VDU 3:
     REM  Elite .... 12 chars/inch
1650 IF C=67 THEN VDU 2:VDU 1,27, 1,15:VDU 3:
     REM  Condensed 17 chars/inch
1660 IF C=68 THEN VDU 2:
     VDU 1,27,1,121,1,126,1,0,1,0,1,0,1,192,1,32,1,208,
     1,0,1,0,1,0:VDU 3:
     REM  Download Left Quote to 126, normally <TILDA>
1670 IF C=69 THEN VDU 2:VDU 1,27,1,121,1,92,
     1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0:VDU 3:
     REM  Download <space> to 92, normally '\' <back
     slash>
1680 IF C=70 THEN VDU 2:VDU 1,27, 1,78, 1,51:VDU 3:
     REM  Skip over perforations (3 lines)
```

.... *B.SETPRT* Contd >>>

.... *B.SETPRT* Contd >>>

```
 1690 IF C=71 THEN VDU 2:VDU 1,27, 1,64, 1,27, 1,82, 1,0,
      1,27, 1,80, 1,27, 1,79:VDU 3:
      REM  Initialise, US char set, Pica, release skip
      over perforation, cancel downloads
 1700 IF C=72 THEN exit%=TRUE
 1870 IF C=42 THEN PROCstar(pm$)
 1880 ENDPROC
 1890 :
20400 DEF PROCwindow1:IF w=2 X=POS:Y=VPOS
20420 VDU28,0,19,79,3:w=1:ENDPROC
20430 :
20440 DEF PROCwindow2:VDU28,0,24,79,21
20460 VDU31,X,Y:w=2:ENDPROC
20480 :
30000 DEF PROCstar(p$)
30010 PROCwindow1:CLS:PROCoscli(p$):PROCwindow2
30020 PRINT "Press any key to continue";
30030 G=GET:PROCwindow1:PROCmenu:PROCwindow2:PRINT
30040 ENDPROC
30100 :
31000 DEF PROCerror
31010 IF ERR=17 THEN PRINT'"Command aborted":GOTO 140
31012 IF ERR>189 AND ERR<208 REPORT:PRINT:GOTO 140
31020 ON ERROR OFF
31030 PROCwindow2
31040 REPORT:PRINT" at ";ERL
31050 VDU26:*FX4,0
31060 ENDPROC
```

---

## ***SCREEN DUMP IN MODE 7***

supplied by F J Andrew

```
10*KEY0 V.2,1,27,1,81,40:F.A=&7C00TO&7EF:B=?A:
   IFB<32ORB>126 V.1,32:
   N.EL.IFB=35 V.1,27,1,82,1,3,1,35,1,27,1,82,1,0:
   N.EL. V.1,B:N.:V.3¦M
```

AU 2/85 P 119

* * *

# *FX CALLS VI

## Have you Tried Flushing a Buffer?

By Anne Flower, Wellington.

Things have been getting rather involved over the last few articles, but it's hopefully back to more basic things this time. Back in part II (*Beeblet*, May 1988), I considered the case of the flooding printer, and said there would be more about buffers later. Well, it's later now, so here goes.

A buffer may be something to stop a train going off the end of the track, and in computerese it's still a holding bay for data of some sort before it gets sent somewhere else. In the case of the computer's printer buffer, when it filled up, it would make the computer stop what it was doing until the buffer had passed on to the printer enough characters to fit some more in.

If it is doing a screen dump, often the printer seems able to print the line of dots faster than the computer can translate the screen dots into printer dots - and so the carriage pauses at the end of each line, waiting for another line of data to arrive through the computer's buffer. So, in this case, the computer can't fill that buffer fast enough for the printer. (Note, that I am not referring to any form of buffer physically in the printer or attached between the computer and the printer, but only to the area allocated within the computer for the purpose.)

There are other buffers, and the most noticeable one is the keyboard buffer. Back in part IV (*Beeblet*, July 1988) I referred to the program that took No for an answer - or more accurately, NNNNNNNNNNNNNNNNNNNNo. All those 'N's were stored in the keyboard buffer. With some programs you know what the prompts are, and can type ahead of them, rather than wait for individual prompts to appear on the screen. Again, this is the function of the keyboard buffer - to accept your commands, and to pass them on to the rest of the computer when it can.

I used *FX21,3 in May, but there is more to it:

*FX21,n will flush a particular buffer. Which buffer, is specified by the value of 'n':

| | |
|---|---|
| 0 | Empty keyboard buffer |
| 1 | RS423 input buffer |
| 2 | RS423 output |
| 3 | Printer |
| 4 | Sound channel 0 |
| 5 | Sound channel 1 |
| 6 | Sound channel 2 |
| 7 | Sound channel 3 |
| 8 | Speech buffer |

So you can choose to clear a specific buffer, and only that one, or you can use

```
*FX15  or  *FX15,0
```

to clear every buffer there is. To clear input buffers only, make the X register any value other than 0. This command can be used in programs asking for input to make sure the person hasn't inadvertently pressed some keys, or been resting on the space bar:

```
REPEAT
  *FX15
  INPUT"Pick a number from 1-100",ans$
UNTIL VAL(ans$) >0 AND VAL(ans$) <101
```

Hearkening back to last month's program killing, a way of ending a program and making it unlistable could be:

```
*KEY6NEW¦M
*FX138,0,134
END
```

Typing in OLD will still recover the program, so perhaps the last line should read:

```
!PAGE=0:!(PAGE+4)=0:END
```

It has the advantage that the would-be program peeper won't be sure which program lines to delete before RUNning the program - often protection is contained in the first few program lines. Back to the buffers though.

*FX138 is the way to insert something into a buffer. The X register specifies which buffer, using the same values as for *FX21.

The Y register specifies what is to be inserted.

It is a way of forcing, in this instance, a particular keypress, without offering the option to the human at the keyboard. The Ascii value of fkey 6 is 134, so this was used for the Y parameter.

I wanted to use this facility in the July article on Red keys, within the boot file listed. Instead of

```
      FORI%=0TO25STEP4....
```

the second time at line 8, it would have been nice to get the computer to press f8 which had the same definition by *FX138,0,136 instead of typing in the whole line of commands. However, the computer gives priority to the Exec file, and doesn't take any notice of what is in the keyboard buffer until it has finished the file. Then it looks at the keyboard buffer, discovers the keypress and actions it - all too late for our purposes. So it pays to choose carefully when you would use this facility.

(Or see: Suspending an Exec file - August *Beeblet*)

Osbyte 128 is a would-be *FX call, which I used in May - disguised as an ADVAL command. This call will either read the analogue-digital converter channel, or it will check the status of a specified buffer. The User Guide explains in more detail, under the ADVAL command, however where ADVAL uses minus numbers (eg ADVAL-4), Osbyte sets X=252. In fact, the minus number is what you subtract from 256 to get the number for Osbyte. So I leave it to you to look up and read your User Guide on how to check specific buffers.

We have looked at mainly output buffers, but there are also input "streams" waiting to flood you. Fortunately you can choose which stream to apply sandbags to:

| | |
|---|---|
| *FX2,0 | takes input from the keyboard and disallows RS423 |
| *FX2,1 | takes input from the RS423 and enables it. |
| *FX2,3 | takes input from the keyboard while leaving RS423 enabled. |

You can choose which output stream you will use too - printer, RS423, screen etc:

*FX3,0 is the default setting, and allows you to send data to the screen, the printer (after VDU2), or via the *SPOOL command, but not to the RS423.

You can choose various combinations by adding up the relevant bits in the table below to form the required value for the X register.

| bit set on | |
|---|---|
| 0 | enables RS423 |
| 1 | disables VDU driver (screen) |
| 2 | " printer driver |
| 3 | enables printer (without regard to CtrlB or CtrlC |
| 4 | " spooled output |
| 5 | doesn't do anything (yet?) |
| 6 | disables printer driver but will allow characters preceded by a VDU1 through |
| 7 | see 5 |

Having released your data into the relevant streams, it is over to you to remember the first part of this article, and dredge their buffers when needed!!

:::::::::::::::::::::::::::::::::::::::::::::::::::::::::

## *VERIFY FILES*

Supplied by J Andrew, Wellington

The following key routine will allow a saved file to be verified. The main use would be on cassette files but the routine will work on disc files.

```
10 *KEY0 CLS:INPUT'"Filename";F$:PRINT'"Searching":
   Z=OPENIN(F$):FOR J%=PAGE TO TOP-1:A%=BGET#Z:
   IF ?J%<>A% THEN PRINT'"ERROR":CLOSE#Z:STOP:
   ELSE NEXT J%:PRINT'"OK":CLOSE#Z|M
```

AU 4/84 P 58

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# Home Thoughts on Ordering Abroad

## Part 2

by L. E. S. Amon, Dunedin.

*Last month, Part 1 covered general aspects relating to ordering abroad. This month, this part covers experiences relating to specific products. Strictly it forms a number of mini-reviews. We continue....*

Now, I am going to name names and give very brief reviews of purchases and companies. Where possible I shall refer to past reviews in the *Beeblet* or *Acorn User*. All orders were made from *Acorn User* advertisements.

Aries B20 & B12S. The B20 was the original shadow screen memory for the Model B. The B12S was a board to expand the sideways ROM sockets to 12; the S version was for those machines which already had Solidisk sideways RAM boards. Both units looked very professional although the B20 failed to work until we noticed the unsoldered leg on one of the chips; it was intermittent enough to believe that the unit had passed the factory tests. The company's product lines were later taken over by Watford, with whom I have not dealt.

| | | |
|---|---|---|
| Reviews: | B20: | *Acorn User*, Apr. 1984, p.162;<br>*Beeblet*, Feb. 1984 pp.25-26. |
| | B12: | *Acorn User*, Apr. 1985 pp.167-170. |

NAMAL disc drives. These were a boxed pair of TEAC drives, 40/80 track switchable with power supply. No troubles until the toroidal power transformer developed an open circuit on the inside of the primary. A very patient friend rewound it, since when there has been no more trouble.

Cambridge Microcomputer Centre, 153-154 East Road, Cambridge CB1 1DD. VISA. Prices were good but that was almost three years ago.

ACP cartridges, ADI, ADT, ARM. By now I had changed the Model B for a Master 128. The empty cartridge supplied by Barsons had one socket which looked as if it had been soldered in by a beginner, and would not go back together with a ROM in the socket. By contrast the ACP cartridge had two low profile ROM sockets and gave no trouble. The Advanced Disk Investigator and Advanced Disk Toolkit ROMS came with understandable manuals and performed as claimed. The Advanced ROM Manager ROM offered a useful extension of the Master's command set, but would probably be more essential to a Model B owner who wanted to develop his own ROMs or analyse someone else's.

| | | |
|---|---|---|
| Reviews: | ADT: | *Acorn User*, Nov. 1986, p. 137 |
| | | *Acorn User*, July 1985, pp.167-170 |
| | ADI: | *Acorn User*, Sep. 1986, p. 143 |

Advanced Computer Products Ltd., 6 Ava House, High Street, Chobham, Surrey GU24 8LZ. Advanced Disk Toolkit #34.50. Advanced Disc Investigator #28.75. Advanced ROM Manager #14.95. Advanced ROM Adaptor 2 #14.95. Inclusive of VAT. ACCESS & VISA.

DOSCOPY. An inexpensive piece of software on disk, without which I now could not do. It allows me to read and write nine different MS-DOS disk formats on a Model B or Master. About two weeks after receiving my disk, I received an earlier version with an apologetic letter explaining that they had found a bug in the version which they had sent me. Top marks.

BAKsoft, 20 Leys Avenue, Cambridge CB4 1JF. DOSCOPY #19.95 (I think). Other programs for Torch<>MS-DOS, CP/M<>MS-DOS, and BBC<>CP/M.

Pineapple DIAGRAM I & II, PCB I, BASIC, Marconi Trackerball. These were all supplied by Pineapple Software and are good products. DIAGRAM is a package for drawing electronic circuit diagrams, but is much more versatile than that. A number of "ikons" are predefined, and these can be supplemented or replaced by the user. The package can then be used to draw genealogical charts or ruled tables, or anything else that can be placed on a regular grid. Printed circuit artwork can be drawn, but this is better done with the PCB package which is designed with this in mind. The package contains its own "Epson-compatible" screen dump routines, which work well

with my Super-5 EP-1201 printer. DIAGRAM I only claims to work under DFS, although it is implied that it will work, but more slowly, under ADFS.
Review: (DIAGRAM I) Computers in Genealogy (UK), V.2 N.5 pp.112-3 Sep. 1986.

DIAGRAM II claims to work under ADFS and requires either an Advanced Graphics ROM or the Master which has the Advanced Graphics built in. Many of the restrictions of DIAGRAM I are removed, and many more ikons can be defined, but the files created are much larger. It can work on the files created by DIAGRAM I but only with DIAGRAM I's features. I have not yet made my copy work with ADFS; it fails with an obscure system error message, which may mean that I have set an obscure but incompatible system option. I must get around to writing to Jim Daniels at Pineapple. His communications regarding a minor problem with DIAGRAM I were prompt, terse, but very helpful.

I have PCB I, for drawing printed circuit artwork but have not yet seriously used it. PCB II is out with many more features and an attractive, but still rather expensive, trade-in offer. Perhaps I should trade-in before I get to like some feature of the early version which does not carry over to the new one.

The Marconi Tracker Ball is like an upside-down mouse which does not move on the desk. A boon for people like me who clutter up the work surface with books and papers. It comes with a ROM which allows it to operate in four modes, which are:

1. Off. In this mode the computer behaves as if the tracker ball is not connected.
2. Arrow key. Although the arrow keys continue to work normally, the same effect can be had by rotating the ball in the appropriate direction.

Four different sensitivities can be set, and the effects can be inverted, i.e. rotating the ball to the left can move the cursor to the right. (Yes, there are circumstances where this is logical).

3. User mode. In this mode the tracker ball sends information to the computer in the form of ADVAL values.
4. Joystick. The tracker ball can emulate a joystick connected to the analog interface. Three buttons on the tracker ball case default to the functions of the <delete>, <return> and <copy> keys.

A word of warning: the tracker ball cannot quite emulate a mouse in one respect; it is almost impossible to rotate the ball with any dexterity while holding down one of the buttons. A recent *Acorn User* carried a news item about a modified version for the disabled, in which the buttons toggled on and off to correct this deficiency.

The Pineapple BASIC compiler produces code which is even faster than the BBC BASIC interpreter. It is very compatible with BBC BASIC syntax. There is, however, a major restriction which is understressed in the Pineapple advertisement; this is a 16-bit, integer-only, BASIC with only the string and integer built-in functions implemented - no real numbers. Otherwise, it is good and a real bargain at the price.

Pineapple Software, 39 Brownlea Gardens, Seven Kings, Ilford, Essex IG3 9NL. DIAGRAM II #55.00. PCB #85.00. Trackerball + ROM #69.00. VAT extra. VISA & ACCESS.

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## FREEZING VIEWSHEET

## *- HELP WANTED*

*Roger Gonin's writes:*

In a couple of spreadsheets, I derive a column of formula results, updating them from month to month for Committee meetings. At the year-end, I want to transfer the final figures to a "Last Year" column in order to start the new "This Year" sheet, but I don't want them to be subject to alteration any more. They are now constants, historical values only, and their slots should contain nothing by way of formulae or other slot references. Even writing to and reading from a Link file is unsatisfactory as a down the years basis, and all I have been able to do so far is to re-key each formula result from the new column. Has anyone a means of "fixing", Copying or Replicating a formula result in such a way as to eliminate the variability?

*Can any of the VIEWSHEET experts assist Roger?*
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# PRINTER REVIEW

## *EPSON LQ850*

by Denis Cribb, Wellington

I've just bought myself a new printer. My aging RX80 was deemed to be inadequate for the printing work that my computer is being increasingly used. Although elite characters were ok, no one could really claim that they were NLQ. I had bought the RX80 in the first place because of an inherent desire for quality, and because the then newly released IBM PC used a rebadged RX80 the boys at IBM new quality when they saw it too.

So, what to replace it with? I didn't want just NLQ; real letter quality fonts were essential, as was speed. Although I didn't have an unlimited budget, I was prepared to pay a premium for quality. That meant looking at a 24 pin head machine, and they don't come dirt cheap.

An advertisement for the new LQ850 caught my eye, and after some further research, it had also caught my credit card. The recommended retail price is a little under $2000, but I found a Wellington retailer selling it for $1645. The 15" carriage version (LQ1050) sells for about an extra $400.

The specifications are comprehensive. The LQ850 is a 24 pin impact dot matrix printer, with three pitches 10, 12, and 15 characters per inch. Speeds are as follows:

| | |
|---|---|
| 10cpi draft | 220 characters per second |
| 10cpi LQ | 73 characters per second |
| 12cpi draft | 264 characters per second |
| 12cpi LQ | 88 characters per second |

Printing direction is bidirectional (the head prints while moving both left and right) and logic seeking (the head moves to where the first character is to be printed, rather then travelling the full width of the guide rail).

Paper feed is both friction and push tractor. An optional pull tractor is available. The push tractor means that no paper is wasted as printing can begin on the first line of the first sheet. I used to curse the RX80 because of its paper wasting habits, especially on short runs.

I'm enjoying the friction feed; while this is not exactly new technology, it's a new experience for me.

The LQ850 has a rather nifty feature called Smartpark. Hit a button. and the printer backfeeds tractor paper out of the way of the print head, so that single sheets can be fed in. Hit the button again, and the tractor paper is fed forward to the top of the form.

This beast even remembers where the top of form is after the power is turned off AND top of form can be adjusted (permanently) in micro steps while the power is on.

A cut sheet feeder is optional. Two paper separators come with the machine one for tractor paper and the other for single sheets. The printer also has two paper guides one automatically retracts out of the way until about six lines have been printed, and then moves forward.

Envelopes, multiple forms, single sheets, and continuous paper are all handled with ease.

The type faces are something else, especially when compared with the RX80. Three fonts come built in draft, Roman, and Sans Serif. The latter two are letter quality (real LQ, not NLQ!). Other font cartridges are available, and are easily plugged in (a la Master 128).

The even better news is that the fonts are able to be selected from a panel on top of the machine, as well as by dip switch settings and by software control. And talking of dip switches, these little blokes can be accessed easily, without having to dismantle the machine to get at them! (RX80 RIP).

As well as the usual Epson range of type sizes (enlarged, double width, condensed, italic, double height, underlined, super/sub script etc etc), the printer is also fully proportional (another post RX80 experience).

Another nifty feature is the way in which the printer carries out its diagnostic routine. Before it charges ahead and prints out its entire character set, it prints a chart of all the dip switches and their current settings.

I'm impressed with this beast. It's a great advance on the RX80, it's fast, and the print quality is superb. The paper handling features are impressive as well.

And talk about quiet, Trev...

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# *RAPID 36-GON.*

by D.S. McDonald, Wellington.

John Andrew's program "CIRCLE", (Drawing Circles Quickly, *Beeblet*, July, 1988) uses the trigonometric identities:

```
SIN(A+D) = SIN(A)COS(D) + COS(A)SIN(D)
COS(A+D) = COS(A)COS(D) - SIN(A)SIN(D).
```

"CIRCLE" can be made 10% faster by calculating:

```
D=PI/18 : B=COS(D) : C=SIN(D)
```

replacing constants .9848, .1736, which are prone to loss or error. Also, incorporating PLOT in the calculation loop, and plotting 37 points (cutting down on duplication of 0 deg and 90 deg within each quadrant.), the time for executing the procedure CIRCLE, exclusive of DIM and MODE is then 34 centi-seconds.

If many circles are going to be plotted, it is worth calculating arrays once at the beginning for FSIN(ND), FCOS(ND), for N=0 TO 9, or up to N=36 (up to 74 function evaluations for a mere 10 different values). Procedure PROCFSIN below does this.

Using some of John's work, I have developed a procedure to plot a 36-gon (or 1, 2, 3, 4, 6, 9, 12, or 18-gon) with optional colour fill - PROCA36GON, below. A smaller number of sides speeds plotting. However, I have not duplicated the code required to reflect quadrant 1 in quadrants 2, 3, and 4, instead calculating 37 vertices using:

```
Plot R*FSIN(N%),R*FCOS(N%).
```

Procedure time for a plain circle is 41 centi-seconds, or filled circle 298 centi-seconds. If the object of maximum speed remains, duplication is probably necessary, A37GON 29 centi-seconds.

The program follows on the next page:

```
 10 MODE1:PRINT"PROG A36GON, DRAW CIRCLES UP TO 36 SIDES
    WITH COLOUR FILL, D.MCDONALD, 12.8.88"
 20 DIMX%(9),Y%(9),FS(9),FC(9),FSIN(36),FCOS(36)
 30 S=TIME:PROCIRCLE(640,512,400)
 40 PRINT"CIRCLE ";TIME-S
 50 S=TIME:PROCQDRANT:PRINT"QDRANT ";TIME-S
 60 S=TIME:PROCA37GON(600,500,400,5):PRINT"A37GON ";TIME-S
 70 GCOL0,1:S=TIME:PROCA37GON(600,500,400,85):
    PRINT"A37GON FILL ";TIME-S
 80 S=TIME:PROCFSIN:PRINT"FSIN ";TIME-S
 90 DATA36,12,6,2,3,4,9,18,36
100 PRINT"A36GON "'"SIDES OPER  C.SEC"
110 OPER%=5
120 FORA%=1TO9:READB%:IFB%=3THENOPER%=85
130 S=TIME:
    PROCA36GON(500+60*A%,400+12*A%,400,B%,OPER%,A%MOD4):
    PRINT;B%" "OPER%" "TIME-S:NEXTA%
140 END
150
160 DEFPROCIRCLE(X,Y,R%)
170 VDU29,X;Y;
180 X%(0)=0:Y%(0)=R%:MOVE0,R%
190 D=PI/18:B=COS(D):C=SIN(D):
    FORN%=1TO9:X%(N%)=X%(N%-1)*B+Y%(N%-1)*C:
    Y%(N%)=Y%(N%-1)*B-X%(N%-1)*C
200 PLOT5,X%(N%),Y%(N%):NEXT
210 FORN%=8TO0STEP-1:PLOT5,X%(N%),-Y%(N%):NEXT
220 FORN%=1TO9:PLOT5,-X%(N%),-Y%(N%):NEXT
230 FORN%=8TO0STEP-1:PLOT5,-X%(N%),Y%(N%):NEXT
240 ENDPROC
250
260 DEFPROCA37GON(X,Y,R%,OPER%)
270 VDU29,X;Y;:MOVE0,0:MOVE0,R%
280 FORN%=0TO9:X%(N%)=R%*FS(N%):Y%(N%)=R%*FC(N%)
290 PLOTOPER%,X%(N%),Y%(N%)
300 IFOPER%>80THENPLOTOPER%,0,0
310 NEXT
320 FORN%=8TO0STEP-1:PLOTOPER%,X%(N%),-Y%(N%)
330 IFOPER%>80THENPLOTOPER%,0,0
340 NEXT
350 FORN%=1TO9:PLOTOPER%,-X%(N%),-Y%(N%)
360 IFOPER%>80THENPLOTOPER%,0,0
370 NEXT
380 FORN%=8TO0STEP-1:PLOTOPER%,-X%(N%),Y%(N%)
390 IFOPER%>80THENPLOTOPER%,0,0
400 NEXT
410 ENDPROC
```

... A36GON Continued >>>

... A36GON Continued >>>

```
420
430 DEFPROCQDRANT
440 D=PI/18
450 FORN%=0TO9:A=N%*D:FS(N%)=SIN(A):FC(N%)=COS(A):NEXT
460 ENDPROC
470
480 DEFPROCFSIN
490 D=PI/18:REM 10 DEGREE STEPS
500 REM 74 CIRCULAR TRIG FUNCTION EVALUATIONS,  ONLY 10
    DIFFERENT VALUES.
510 FORN%=0TO36:A=N%*D
520 FSIN(N%)=SIN(A):FCOS(N%)=COS(A):NEXTN%
530 ENDPROC
540
550 DEFPROCA36GON(X,Y,R%,SIDES%,OPER%,C%)
560 S%=36DIVSIDES%
570 IFS%*SIDES%<>36THENPRINT'"SIDES% MUST DIVIDE 36 : NOT
    ";SIDES%:ENDPROC
580 VDU29,X;Y;:GCOL0,C%
590 MOVE0,0:MOVE0,R%
600 FORN%=0TO36STEPS%
610 PLOTOPER%,R%*FSIN(N%),R%*FCOS(N%)
620 IFOPER%>80THENPLOTOPER%,0,0:REM FILL
630 NEXTN%
640 ENDPROC
```

## IMPORTANT NOTICES

### *Christmas Disc*

A number of members expressed an interest in the supply of a disc just before Christmas. It is hoped that this can be arranged and it would be appreciated if members having programs that would be suitable for the disc would forward them to:

Christmas Disc
BBC/Acorn Computer User Group (NZ) Inc.,
PO Box 9592
WELLINGTON

It would be appreciated if programs could be forwarded before the end of October. Contributors need have no fear that we might receive too many programs. We would be very pleased to make it two discs if necessary.

*Beeblet Issues: Periodicity.*

Your Committee has been considering whether the number of *Beeblet* issues each year should be reduced - say to bimonthly. The number of contributions have reduced this year, as has the membership.

Although this is a matter which should be agreed to by a General Meeting, either Annual or ExtraOrdinary, it is recognised that the decision is really outside our hands. If sufficient copy is not received, it is just not possible to publish *Beeblet* anyway.

This issue is an example - you will note that it is late. There was clearly insufficient copy available by the deadline to proceed, and even delayed some three weeks this issue does not reach the usual size of some 30 to 40 pages.

There will not be an issue of *Beeblet* for the month of October this year.

At the last AGM a strong preference was made for an issue just prior to Christmas and this will occur. This means that a November issue will only be produced if sufficient copy is received in time to produce both November and December issues.

Although a significant amount of time is required to edit each issue, I will make the time available, but only if the contributions are received. I am only too well aware that *Beeblet* is an important link for those members unable to share with a local User Group.

Since a vote one way or the other at a General Meeting is of little value under such circumstances, you are invited to vote for the number and size of issues of *Beeblet* you would like to see by supplying copy.

If every member met a pledge to supply one contribution each year .....

# CAREWARE

## *USING THE "GEN" PROGRAM*

by Graham Ellett, Wellington

Have you got your copy of CAREWARE yet? If you have, have you sent your donation to the Mental Health Foundation?

Its one thing to have the "PSYCHE" program run through the already prepared pictures on the disc but you can have some fun drawing your own. The program called "GEN" is used for the purpose.

A certain amount of trial and error (with about 90% error) was involved in getting started, but for those who haven't given it a try yet, here are a few tips.

First, copy the following three files from the PSYCHEBROT disc to your own formatted working disc:

GEN PSYCHE PIC1

PIC1 is a good starting point when you want to see where your picture fits in to whole.

CHAIN"GEN" and input the following parameters:

```
Next        D
File        <RETURN>
X=          -1<RETURN>
Y=          0<RETURN>
Size        1.2<RETURN>
Depth       100<RETURN>
MAX-Colour  100<RETURN>
MID-Colour  20<RETURN>
LOW-Colour  3<RETURN>
File        Z<RETURN>
```

I found it handy to use simple file names so that, if it is neccessary to interupt the drawing process, a restart calling up file Z after the initial D can be continued as new file ZZ. With the data as per above the picture will be completed in a couple of hours.

If you have to interrupt, the picture is drawn from scratch, but is completed at high speed up to the interruption point.

When the picture is complete you will be asked for a filename. At this stage give it a name commencing with the letters PIC, followed by a number - eg PIC2. You can then run the PSYCHE program and when PIC1 is displayed, press N if your picture is PIC2, or G followed by the number.

You though that drawing took a long time. Well the most spectacular picture I have managed to complete used the following data:

```
Next         D
File         <RETURN>
X=           -0.315<RETURN>
Y=           0.615<RETURN>
Size         0.02<RETURN>
Depth        4000<RETURN>
MAX-Colour   4000<RETURN>
MID-Colour   1000<RETURN>
LOW-Colour   40<RETURN>

File         Z<RETURN>
```

It took my humble BBC B three days of continuous running to complete that one - but I would still recommend it. Its a great display of colour!

The GEN program progressively saves what has been done, and pressing the ESCAPE key saves progress to date. On one occasion there had been a power cut during the night and the screen was blank in the morning. But it was simple to restart, and two days work was redone in less than ten minutes.

So, dont worry about stopping and restarting. Also, there is no need to keep the monitor going - the computer doesn't know that the picture is not being displayed.

Incidentally, when making early copies of PSYCHEBROT, I overlooked correcting line 10 of the PSYCHE program as covered in the Read-Me notes. LOAD"PSYCHE", list line 10 and if it reads (in part) D%=0 then amend it to read D%=2 and then SAVE"PSYCHE". Until this is done, the PSYCHE program only reads pictures off side 0 of the disc.

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# MACHINE CODE BOOK REVIEW

by Mike Shores, Auckland

The BBC Micro Machine Code Portfolio
ISBN 0-246-12643-4
written by Bruce Smith
Published by Granada Publishing 1984

I'm a bit of a pushover when it comes to SALE notices in bookshops, though very occasionally I find something of value. Such was the case a few months ago when I bought "The BBC Machine Code Portfolio" very cheaply indeed. Until then, I had no idea it existed, and it had been around for years. As such this review is not so much of a new product, but rather of a newly discovered one (to me anyway).

In my view it's a darn good bargain, even at the ordinary price. My only regret is that I didn't find it sooner. I could have saved myself many long hours of trial and error writing my own assembly code to carry out operations covered so well in this publication. However, by writing my own, I did learn a lot about the Beeb that otherwise might have passed me by!

The author provides 75 assembly language routines specifically for the BBC Micro. They vary greatly in length, but all of them are both practical and relatively easy to follow. They also serve to show some fundamental principles of assembly language programming and help greatly to dispel the idea that assembler can be complicated. But the book is not aimed at the absolute beginner; indeed it is unlikely the beginner would find much use for the routines as he would later on.

Each routine is written as a unique procedure and has its own particular line numbers: the book is intended to provide a library of routines to be SPOOLed into your own recording medium and EXECed into any of your own programs at will. This, in itself, is a great idea.

All program listings appear to have been done by preparing plates directly from copies of the output of a dot matrix printer connected to the computer. This makes for a bare minimum of errors as it seems that no programs are type-set (which is where the errors creep in).

The PROCs are grouped in chapters, by function and type. In each case, the PROC is given as part of a small BASIC program which may be run immediately, thus illustrating the way in which the the respective PROC behaves. Many PROCs perform familiar BASIC language instructions, but using assembly code. These include CLG, GCOL, MOVE, GET, PLOT, TAB, STRING$ etc. They are very easy to relate to.

Many other tasks are possible through the PROCs such as ASCII code to BCD code, screen dumps, program listing formatters, listing of function key definitions, multi-byte math functions, hex to ASCII conversion, timer functions, TOP, HIMEM, and so on. A number of the features could be incorporated into a typical "Disc Doctor" type ROM (or a Disc based utility program). The variety of functions proved to be a veritable Cornucopia of well executed ideas, but not all new of course - but remember the book was first published in 1984. My own interest is in the home-blown ROM area, and the book has become a major reference work for me.

Unfortunately, the index is only fair. A few cross-references and clues to functions which are covered in the book itself are omitted. Do you know where to access the current screen mode in your Beeb, or how to read the current colour palette values? They are in the book ... but not in the index. The least informative part of the book is the list of contents where an attempt at witty chapter names manages to obscure their true coverage.

However, if you are into writing machine code programs, particularly for your own ROM images, you will find this book extremely useful, unless you are a very advanced programmer. I thoroughly recommend it.

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## *MEMBERSHIP*

Membership of the National User Group is on payment of an annual subscription from April to March, which is $20.00 for the 1988/9 year. A local branch levy may be payable which entitles attendance at meetings as detailed on the back page. Joining or renewing members get all the back issues of *Beeblet* for the current year - those joining after 1 October may have half the annual subscription waived and only receive *Beeblet* from 1 October.

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# USER GROUP MEETINGS

| | |
|---|---|
| AUCKLAND: | -2nd and 3rd Wednesday of each month at Social Club, Auckland Hospital, Grafton Road at 7.30pm. Contact John Buchanan (Secy), phone 546-985; David Wilkin (Pres), phone 437-540. |
| North Shore: | -last Wednesday of the month, 7.30pm, Salvation Army Hall, Glenfield Road, Glenfield.<br>Contact: Chris, Phone 419-0543 (wk). |
| CHRISTCHURCH: | -fortnightly workshops, Monday 6.30pm at Hagley High School. phone Michael 582-267. |
| DUNEDIN: | -first Thursday of the month.<br>Contact: Martin McDowall, Phone 42-031 |
| HAWKES BAY: | -2nd Sunday 2.30pm, Taradale Primary School. Contact Ron: 444-970, John: 445-729 (librarian), Major: 447-729, Mitch: 85-395. |
| INVERCARGILL: | -Southland Education Centre, 70 Doon St. Contact Bob Evans, 73-050 or Lyndon McEntee (020) 87-365. |
| NELSON: | -second Monday of the month, 7.30pm, Nelson Baptist Church, Bridge St. Contact: Peter, Richmond 8975; Ken, Nelson 85-150; Richard, Richmond 8489. |
| PALMERSTON NORTH: | -Phone Brian Knowles 79-319. |
| ROTORUA: | -first Tuesday of month, Science Lab at Rotorua Girls High School. Phone: Ian 85-583, Joan 81-536 Tony 89-316. |
| TAUPO: | -every second Wednesday, 7.00pm.<br>Contact: David 84-215 (h), 85-124 (wk). |
| TAURANGA: | -every second Wednesday. ph. Chris & Jane 65-076. |
| TIMARU: | -Phone Lloyd van der Krogt Timaru 61-412. |
| TOKOROA: | -1st Friday of month, 7.30pm, Tokoroa High School. Contacts: Don Fraser, 68-813 or Graeme Robertson, 65-346 Tokoroa. |
| WAIKATO: | -first Monday of the month, 7.30pm, Waikato Tech Institute. Ph. Alison or John, Morrinsville 6695. |
| WELLINGTON: | -usually second Wednesday, 7.30pm, Royal Society Lecture Theatre, Turnbull St, Thorndon.<br>-Workshops: fourth Tuesday of month, other details: ph. Don 848-235 or Mike 785-437. |
| OTHER CENTRES: | -let us know and we will publish details here. |

## BEEBLET

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CONTRIBUTIONS: -most welcome. Listings should be sent in on tape or disc. (Tape - 2 copies, one at 300 baud please). Please include written explanation of listing; text and graphics only material welcome too.

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